

REMARKS

Claims 1-4 and 6-12 were examined and rejected. Claims 5 and 13-21 have been withdrawn from consideration. Applicants amend claims 1 and 8. Applicants request reconsideration of claims 1-4 and 6-12 in view of at least the following remarks.

I. Claims Rejected Under 35 U.S.C. §102

The Patent Office rejects claims 1-4, 6, and 8-12 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,348,906 issued to Harajiri (Harajiri). It is axiomatic that to be anticipated every element of the claim must be disclosed within a single reference.

Applicants respectfully disagree with the rejection above of amended independent claim 1 and submit that claim 1 is allowable for at least the reason that Harajiri does not describe, "forming a spacer portion of dielectric material adjacent to at least one of the exposed side portions," as required by claim 1. Harajiri describes polysilicon film 14 on film 11 which is in turn on polysilicon film 10b (see col. 5, lines 25-30; and Figure 2(C)). However, polysilicon film 14 is a semiconductor, but is not described as a dielectric or insulation material.

Consequently, the Patent Office has not identified and Applicants are unable to find any description in Harajiri of a spacer portion of dielectric material adjacent to at least one of the exposed side portions as required by independent claim 1. Hence, Applicants respectfully request that the above rejection of claim 1 be withdrawn.

Applicants submit that dependent claims 2-4 and 6, being dependent upon allowable base claim 1, are patentable over Harajiri for at least the reasons explained above. Thus, Applicants respectfully request that the Patent Office withdraw the above rejection of dependent claims 2-4 and 6.

Applicants also disagree with the above rejection of independent amended claim 8 and submit that amended claim 8 is allowable for at least the reason that Harajiri does not describe, "depositing a second thermally conducting material over the structure and to the first thermally conducting material," as required by amended claim 8.

Harajiri describes polysilicon film 14 formed over film 11 which in turn is formed over polysilicon film 10b (see col. 5, lines 25-30; and Figure 2(A)). Thus, polysilicon film 14 is not formed to polysilicon film 10b.

Consequently, the Patent Office has not identified and Applicants are unable to find any description in Harajiri of a second thermally conducting material deposited to the first thermally conducting material, as required by amended claim 8. Hence, Applicants respectfully request that the Patent Office withdraw the rejection above of claim 8.

Applicants submit that dependent claims 9-12, being dependent upon allowable base claim 8, as amended, are patentable over Harajiri for at least the reasons explained above. Thus, Applicants respectfully request that the Patent Office withdraw the above rejection of dependent claims 9-12.

Second, the Patent Office rejects claims 1, 3, 6-8, 10, and 12 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,496,771 issued to Cronin et al. (Cronin).

Applicants respectfully disagree with the rejection of independent claim 1 and submit that claim 1 is allowable for at least the reason that Cronin does not describe, "filling a portion of a trench with a thermally conducting material having a thermal conductivity greater than a thermal conductivity of silicon dioxide," as required by claim 1.

Cronin teaches isolation oxide 24 formed and filling a groove in substrate 10 (see col. 5, line 65 through col. 6, line 8). However, Cronin does not describe isolation oxide 24 as a thermally conducting material having a thermal conductivity greater than a thermal conductivity of silicon dioxide as required by claim 1.

Consequently, the Patent Office has not identified and Applicants are unable to find any description in Cronin of filling a portion of a trench with a thermally conducting material, as required by claim 1. Hence, Applicants respectfully request that the Patent Office withdraw the rejection of independent claim 1, for at least this first reason.

In addition, claim 1 requires, “patterning a thermally conducting contact to the thermally conducting material.”

Cronin teaches gate oxide 44b as part of a stack structure above substrate 10 and possibly contacting isolation oxide 24 (see col. 4, line 61 through col. 5, line 2; and Figure 1f). However, Cronin does not describe gate oxide 44b as a thermally conducting contact.

Consequently, the Patent Office has not identified and Applicants are unable to find any description in Cronin of patterning a thermally conducting contact to the thermally conducting material, as required by claim 1. Hence, for at least the second reason, Applicants respectfully request that the Patent Office withdraw the above rejection of claim 1.

Applicants submit that dependent claims 3 and 6-7, being dependent upon allowable base claim 1, are patentable over Cronin for at least the reasons explained above. Thus, Applicants respectfully request that the Patent Office withdraw the above rejection of claims 3 and 6-7 for at least the two reasons stated above.

In addition, Applicants respectfully disagree with the above rejection of claim 8, as amended, for at least the reason that the cited reference does not teach, “filling a portion of a trench with a first thermally conducting material,” or “patterning a thermally conducting contact to the first thermally conducting material having a thermal conductivity greater than a thermal conductivity of silicon dioxide,” as required by claim 8. The arguments above with respect to claim 1 apply here as well. Hence, Applicants respectfully request that the Patent Office withdraw the rejection of independent claim 8, as amended, for at least the same two reasons as identified above with respect to claim 1.

Applicants submit that dependent claims 10-12, being dependent upon allowable base claim 8, are patentable over Cronin for at least the reasons explained above. Thus, Applicants respectfully request that the Patent Office withdraw the above rejection of claims 10-12 for at least the two reasons stated above.

Next, the Patent Office rejects claims 1-4 and 8-10 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,306,724 B1 issued to Chen (Chen).

Applicants respectfully disagree with the rejection above of independent claim 1, and submit that claim 1 is allowable for at least the reason that Chen does not describe, “patterning a thermally conducting contact to the thermally conducting material,” as required by claim 1.

Chen describes field plate layer 32 of polysilicon deposited on storage dielectric 30, which is in turn deposited on trench filler layer 28 of polysilicon (see col. 2, lines 41-50; and Figures 1E-1G). Thus, Chen describes storage dielectric 30 covering trench filler layer 28, and polysilicon layer 32 over dielectric layer 30.

Consequently, the Patent Office has not identified and Applicants are unable to find any description in Chen of a thermally conducting contact to the thermally conducting material, as required by claim 1. Specifically, Chen does not describe polysilicon layer 32 contacting polysilicon layer 28. Hence, Applicants respectfully request that the Patent Office withdraw the rejection above of independent 1.

Applicants submit that dependent claims 2-4, being dependent upon allowable base claim 1, are patentable over Chen for at least the reasons explained above. Thus, Applicants respectfully request that the Patent Office withdraw the rejection above of dependent claims 2-4.

Next, Applicants respectfully disagree with the above rejection of independent claim 8, as amended, and submit that amended claim 8 is allowable for at least the reasons the Chen does not describe, “a thermally conducting contact to the first thermally conducting material,” as required by amended claim 8. The arguments above with respect to claim 1 apply here as well. Thus, Applicants respectfully request that the Patent Office withdraw the above rejection of independent claim 8, as amended, for at least this first reason.

In addition, claim 8 requires, “a second thermally conductive material over the structure.” However, Chen describes nitride layer 36 deposited on oxidized layer 34

and storage dielectric 30 (see col. 2, lines 52-55; and Figure 1H). However, Chen does not describe nitride layer 36 as a thermally conducting material as required by claim 8.

Consequently, the Patent Office has not identified and Applicants are unable to find any description in Chen of a second thermally conducting material over the structure, as required by amended claim 8. Hence, Applicants respectfully request the above rejection of amended claim 8 be withdrawn for at least this second reason.

Applicants submit that dependent claims 9-10, being dependent upon allowable base claim 8, as amended, are patentable over Chen for at least the reasons explained above. Thus, Applicants respectfully request that the Patent Office withdraw the above rejection of dependent claims 9-10 for at least the two reasons given above.



CONCLUSION

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance, and such action is earnestly solicited at the earliest possible date.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly, extension of time fees. If a telephone interview would expedite the prosecution of this Application, the Examiner is invited to contact the undersigned at (310) 207-3800.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN, LLP

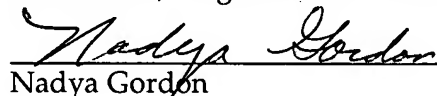
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Angelo J. Gaz, Reg. No. 45,907

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, California 90025
(310) 207-3800

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I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail with sufficient postage in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, Virginia 22313-1450 on August 30, 2004.

 8/30/04
Nadya Gordon Date